

CITING CLOSE PERSONAL LINK Vice President Visits NIH to Complete Covid Vaccination

BY CARLA GARNETT

Less than a week after taking office, Vice President Kamala Harris visited NIH on Jan. 26 for the first time as VP. She was on a priority mission—vaccination against Covid-19.

“NIH scientists created something that will save your life and the life of your family and the community,” she said, after being injected with her second dose of the Moderna Covid-19 vaccine on stage in Masur Auditorium. “I want to urge everyone to take the vaccine when it is your turn. On behalf of President Biden and myself, thank you for what you do every day. The bottom line is



At NIH, Vice President Kamala Harris receives her second dose of the Covid-19 vaccine from Judy Chan, an OMS nurse practitioner.

PHOTO: CHIA-CHI CHARLIE CHANG

that we’re going to get 100 million vaccinations in 100 days and we’re going to continue to do what is necessary to improve the health and well-being of our country.”

Judy Chan, a nurse practitioner in NIH’s

Occupational Medical Services, administered the immunization shot. Harris had received her first dose of the vaccine in southeast Washington, D.C. on Dec. 29. Her hour-long visit to NIH—to complete the 2-part vaccination process and to record vaccine confidence public service announcements with NIAID director Dr. Anthony Fauci—was introduced by NIH director Dr. Francis Collins, who spoke of the close tie she has to the agency.

“It is our great privilege to welcome Vice President Kamala Harris and her husband, Second Gentleman Doug Emhoff,” said Collins, also on stage in Masur. “Our 40,000 NIH staff [most viewing remotely via video-cast] are incredibly excited that you’re part of NIH this afternoon...[In reading up on Harris’s background], I learned to my delight that we have a generational connection between your mother and NIH.”

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Kicking it for winter time fitness. See p. 12.

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Cooper Navigates Lifelong Journey Toward Health Equity

BY DANA TALESNIK

The contrast was stark. Some kids grew up in spacious homes and attended private schools, while many others lived in shacks without electricity

or running water. That was the childhood scene for Dr. Lisa Cooper, director, Johns Hopkins Center for Health Equity. Growing up in West Africa, she was among the fortunate, but she couldn’t ignore, and



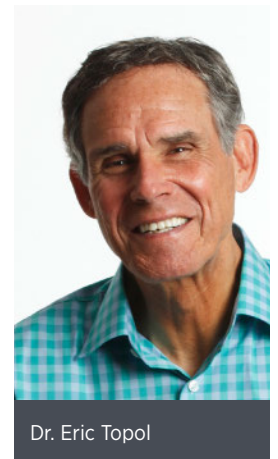
Dr. Lisa Cooper

VARIOUS ASPECTS OF ATTACK Covid-19 Affects Heart, Other Organs

BY ERIC BOCK

Covid-19 is not just a respiratory virus. The virus affects many organs, including the heart, said Dr. Eric Topol during a recent NHLBI webinar series called “Covid-19 Insights.”

“The more we learn about Covid, the more we learn about other aspects of its attack,” said Topol, executive vice president and professor of molecular medicine at Scripps Research Institute and



Dr. Eric Topol

SEE COOPER, PAGE 8

SEE HEART, PAGE 4



Dr. Sarah L. Szanton

Szanton To Present NINR Director's Lecture

On Thursday, Mar. 4, Dr. Sarah L. Szanton will present the first 2021 NINR Director's Lecture from 1 to 2 p.m. via NIH videocast. In her presentation, "Leveraging Strengths to Achieve Health Equity: From Clinical Insight to Program of Research," Szanton will discuss the role of the

environment and stressors on health disparities in older adults, particularly those trying to "age in place."

Szanton is health equity and social justice endowed professor at the Johns Hopkins School of Nursing. Szanton's work particularly focuses on decreasing barriers to "aging in place" including addressing social determinants of health such as financial strain and racial discrimination. She co-developed the Community Aging in Place—Advancing Better Living for Elders (CAPABLE) program, tested in trials and scaled to 32 sites in 17 states. She was the 2019 Heinz Award winner for the human condition and is a PBS "Next Avenue Influencer in Aging."

Szanton has a B.A. in African-American studies from Harvard University, a B.S.N. from Johns Hopkins School of Nursing, an M.S.N. from the University of Maryland and a Ph.D. from Johns Hopkins University. She leads the NINR-funded PROMOTE P30 Center.

NINR's Director's Lecture Series brings top scientists from across the nation who are advancing nursing science in significant ways to share their work and interests with a trans-disciplinary audience at NIH and the broader biomedical research community. The event is free and open to the public. For more information and to register, visit <http://ow.ly/YYB650D8UMM>.

ORWH Launches 30th Anniversary Virtual Environment

ORWH created a virtual environment website for its 30th Anniversary Virtual Meeting Series, held last December. This extensive environment includes video recordings from the meetings, scholarly posters from the symposium's research presentations, videos about ORWH and its signature programs, historical information about ORWH and other resources.

To learn more, visit <https://orwh.od.nih.gov/in-the-spotlight/>



Memorial Tree Planted

A Japanese maple tree and plaque have been placed in memory of Dr. Stephen I. Katz, NIAMS director (1995-2018) and Gahan Breithaupt, NIAMS executive officer (2004-2019). The tree is located on the lawn of Bldg. 31, on the grassy hill leading up to the Clinical Center. A dedication ceremony will occur once all groups are able to return to the workplace.

PHOTO: STEPHANIE CRAVER



all-articles/orwh-hosted-30th-anniversary-virtual-meeting-series-advancing-health or access the virtual environment website at <https://www.labroots.com/ms/virtual-event/orwh-s-30th-anniversary-virtual-meeting-series-advancing-health-women-science> until December 2021.

New users can click the REGISTER NOW button to enter their information and access the virtual environment. Registered users can log in and click WATCH.

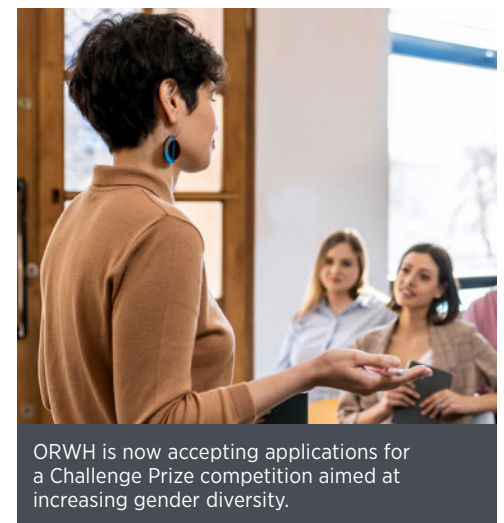
ORWH Organizes Challenge Prize for Gender Diversity

The Office of Research on Women's Health is now accepting applications for a Challenge Prize competition aimed at increasing gender diversity and removing barriers to equity at colleges and universities.

The Enhancing Faculty Gender Diversity Prize will recognize institutions that have acted systemically to address gender diversity and equity among faculty in biomedical and behavioral science departments. The competition will

highlight best practices, lessons learned and evidence-based approaches.

Colleges and universities across the United States may be recognized by sharing successful approaches to improving gender diversity. The competition will award up to 10 institutions with \$50,000 each, for a total of \$500,000 in prizes.



ORWH is now accepting applications for a Challenge Prize competition aimed at increasing gender diversity.

Institutions will have an added opportunity to help develop an NIH-supported national toolkit for sharing successful strategies widely.

The competition is limited to U.S.-based accredited public or private nonprofit academic institutions that grant baccalaureate or advanced degrees in biomedical, behavioral or health sciences. Applications will be accepted through 5 p.m. (ET), Friday, Apr. 16. For details, visit <https://www.challenge.gov/challenge/nih-prize-for-enhancing-faculty-gender-diversity/>.

Zenk Examines How Communities Affect Our Health

BY ELLEN O'DONNELL

For many of us, getting through the Covid-19 pandemic has brought us face-to-face at times with questions such as the role of place in our lives: Where did we come from, how have those communities shaped us, and where do we want to be—now and in the future?

In a virtual lecture, “All Health Is Not Created Equal: Where You Live Matters,” NINR director Dr. Shannon Zenk discussed her research, which has revealed that the places people live shape their health more than they may know. Her talk was the National Center for Complementary and Integrative Health’s 2020 Stephen E. Straus Distinguished Lecture in the Science of Complementary Therapies, honoring the center’s founding director.

Focusing on the science behind social determinants of health—or “the conditions in which people are born, work, live, play and age”—Zenk illustrated how communities vary dramatically both in resources (e.g., jobs, attractive parks, healthier foods and places to exercise) and hazards.

“Some say that ‘zip code is more important for your health than your genetic code,’” she noted. “Differences between community environments are...thought to drive some of the large, persistent health disparities observed across our country and within our cities.” An example is when people living in neighborhoods just a few miles apart differ greatly in life expectancy.

A leading population health researcher and registered nurse, Zenk shared how her background in nursing shaped her research on community environments. Early in her career as a home-health nurse case manager, she visited patients in diverse neighborhoods running the gamut “from privileged to poverty” and found many needs beyond medical ones. Zenk cited a strength of nursing as “the holistic perspective we bring to health and health care,” which has long driven nurses in “supporting people to promote and restore their health...by addressing needs at multiple levels—physical, emotional, social and environmental.”

Some of her graduate school projects conducted in disadvantaged, urban communities in Detroit and Chicago provided another major influence. Themes she heard consistently included “rundown food stores, a scarcity of healthy foods, the ubiquity of unhealthy options and a lack of safe places to engage in physical activity.”

So Zenk began to study more closely how resources were distributed across communities and the resulting implications for people’s health.



Dr. Shannon Zenk gives the Straus Lecture virtually.

One of her innovations has been to study people’s usual activity spaces by using geographic information systems (such as GPS), spatial analysis and wearable devices.

Zenk’s research was further shaped by the public health crisis of rising obesity levels and their associated health risks. She and her colleagues conducted one of the first U.S. studies on “food deserts”—areas that have poor access to grocery stores, supermarkets and farmers markets.

“Tens of millions of Americans live in these deserts, and millions in pharmacy deserts,” she said.

In one study, her team found that low-income Black communities had less access to supermarkets that tend to offer the widest selection of healthy foods—such as prepared salads—and had more access to unhealthy food options, compared with higher income and/or White communities. Often, healthier foods were also more expensive in Black communities. Another topic of interest for Zenk has been body mass index (BMI) in relation to such aspects of local environments as walkability or proximity to fast food restaurants and mass-merchandise stores. Zenk has found some intriguing relationships in cross-sectional studies that call for confirmation in research with more rigorous designs.

Zenk’s work in food deserts has been critical in building an evidence base for policy solutions to improve access to healthy foods in underserved communities. She noted that improving community environments, such as by opening a grocery store, to advance health and reduce health disparities is critical but may not be a sufficient solution. The problem is complex and often calls for multicomponent, multilevel solutions—a strategy that complements NCCIH’s focus on integrative health.

“It might not be enough to work with folks to eat better or engage in physical activity,” Zenk said. “We may in tandem need to improve their environments. This is a challenging area because [many] experimental designs are so difficult or would be unethical...We need to build the evidence on what policies and environmental changes may be most promising. The field could make better use of natural experiments.”

Zenk noted the impact of many of these same issues on Covid-19. “At a time when getting outside for a walk or to exercise or even just for fresh air is helpful to relieve stress, promote health and manage other health conditions,” she said, “adequate park and green space is essential.”

Research has linked greater community greenness to lower Covid-19 incidence, Zenk pointed out.

“Covid-19 will likely have long-lasting

consequences for the public’s health and health inequities, in part because of its powerful effects on social factors, including community environments,” she said.

“Not all health is created equal,” Zenk concluded, “but there are things that we can do and must do. There are dramatic inequities in the conditions in which people are born, work, play and age, and in their opportunities and resources to be healthy. These inequities show up in people’s health. We need research, including to discover not just what micro-interventions, but critically, what upstream macro-level policy and approaches can advance good health for all.”

The full lecture is archived at <https://videocast.nih.gov/watch=40083>. **R**



ON THE COVER: DNA fragments (yellow) derived from a transplanted heart alongside the patient’s own DNA (blue). A new blood test measures donor DNA fragments and detects acute heart transplant rejection earlier than current methods. A study on the new test was published in the journal *Circulation* and was funded by the NHLBI Division of Intramural Research. February is American Heart Month.

IMAGE: ERINA HE, NIH MEDICAL ARTS

The NIH Record

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“Studies suggest [long-term Covid-19] goes on in most people for many months,” Topol said.

Heart

CONTINUED FROM PAGE 1

founder and director of the Scripps Research Translational Institute.

Coronaviruses are spherical viruses that have crown-like protein spikes on their surfaces. The spikes found on SARS-CoV-2, the virus that causes Covid-19, bind to a protein called ACE2, which is located on the surface of cells found in the lungs, heart, arteries and other organs. This binding allows the virus to enter and take over the cell.

New strains of the virus are emerging, Topol warned. One strain, called B.1.1.7, is a “hyper transmissible super-spreader variant” and it’s present in the United Kingdom and Ireland. How these new strains differ from established strains isn’t well known yet.

“It’s the worst thing to have a strain with 50 percent more transmission,” he said. “Even without any increase in lethality from the strain per se, the high incidence of infections will lead to much more in the way of hospitalizations and deaths.”

The virus affects people in different ways. A few people are never infected despite being exposed; 30-40 percent of those infected with the virus are asymptomatic—that is, they never experience symptoms. Fortunately, most people who develop symptoms don’t become seriously ill. A small fraction of patients become critically ill and require hospitalization. In some cases, the illness is fatal.

A tiny fraction of patients experience serious cardiovascular complications,

including the scarring and thinning of the heart muscle, myocarditis, cardiomyopathy, arrhythmias and cardiac arrest. But Covid-19 can cause damage even in asymptomatic patients. It’s not yet known how heart damage occurs—whether from the virus directly attacking heart cells or from the immune system’s response to the virus. Figuring out how the heart damage happens will help researchers

develop better treatments.

“There’s a whole spectrum of things the virus does to the heart and the blood vessels,” Topol said. “We don’t know why certain people are predisposed.”

such as the heart, lung, kidneys, brain, skin and eyes, become inflamed. It’s fatal in 1-2 percent of children.

While the fatalities are “horrific,” he argued, not enough attention has been paid to patients experiencing long-term symptoms of Covid-19. These include chronic fatigue, chest pain, shortness of breath, dyspnea and a decreased ability to perform physical exercise. This is occurring in at least 10-20 percent of people. Those who experience long-term symptoms tend to be young, female and previously healthy.

“Studies suggest it goes on in most people for many months,” he said. “We don’t even know the real duration because this is only a 1-year old disease. It may go on for years.”

In the future, artificial intelligence technologies might be used to accurately diagnose Covid-19. Recently, researchers built an algorithm to identify cases based on the sound of a person’s cough. In a study of more than 4,000 people, the algorithm

★ ★ ★

“There’s a whole spectrum of things the virus does to the heart and the blood vessels. We don’t know why certain people are predisposed.”

-DR. ERIC TOPOL

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Another rare, but serious condition associated with Covid-19 is multisystem inflammatory syndrome in children (MIS-C). In MIS-C, different body parts,

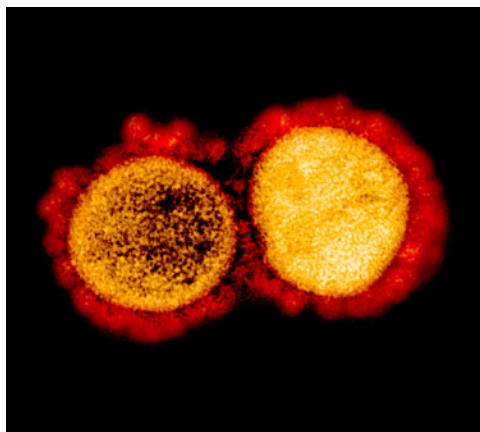
provided an accurate diagnosis 98.5 percent of the time.

Topol cautioned that while there is potential, few AI studies have been fully replicated. A lot more work must be done before these technologies can be used widely.

Sensor data from wearable technologies could help find new infections.

In a study of 40,000 participants, Topol led a team that collected and analyzed data from smartwatches and activity trackers. They found people who are beginning to develop symptoms have a higher resting heart rate, a decrease in steps and an increase in sleep.

“We think we can use this to detect Covid-19 outbreaks early,” he concluded. “We’re hoping to scale this up. We think this could be useful because we can then go in aggressively and do testing and isolation and get a much better containment of the virus.” **R**



Coronaviruses are spherical viruses that have crown-like protein spikes on their surfaces.

IMAGE: NIAID

NIEHS Science Education Office Focuses on Diversity, Equity

BY KELLY LENOX

The National Institute of Environmental Health Sciences is unusual among NIH institutes and centers in having an Office of Science Education and Diversity (OSD). According to OSD director Dr. Ericka Reid, her office supports a diverse environmental health workforce as called for in the 2018-2023 NIEHS Strategic Plan. Activities include outreach, information sharing and providing access to opportunities. The office helps the institute achieve its strategic goal by connecting with elementary students through postgraduate trainees.

To increase participation from groups underrepresented in the scientific workforce, NIEHS hosts local students each year in the NIEHS Scholars Connect Program (NSCP). College juniors and seniors, selected through a competitive process, conduct paid research at the institute and get an inside look at scientific careers. Recruiting focuses on historically black colleges and universities (HBCUs), as well as underrepresented groups at nearby universities, Reid explained.

Normally, students—who work with a mentor and lead researcher—arrive in the summer for full-time laboratory research. During the academic year, they work part-time, culminating in presentations to the entire institute. Lab work is augmented by a series of seminars on leadership, emerging research areas, peer mentoring, articulating accomplishments and applying to graduate and medical schools.

As with so much that happened in 2020, last year's program was different.

NSCP coordinator and OSD Undergraduate Research Training Program manager Dr. Suchandra Bhattacharjee said that 2020's program cycle began in fall, after a summer spent reworking the plan. "Launching NSCP in a virtual format meant treading in uncharted territory," she said. "But we've had incredible support from leadership



"We are grateful to NIEHS leadership, mentors, lab skills teaching partners, seminar speakers, administrative staff, security, technology and web teams, and communications. It took everyone working together to hold this fall connection," said Dr. Suchandra Bhattacharjee (l). Dr. Ericka Reid (r) described teachers participating in NIEHS summer workshops as getting re-lit. "They say they forgot how much they love science," she said.

PHOTOS: STEVE MCCAW

and mentors, and the scholars were enthusiastic, saying they would do it all over again.

The fall connection wrapped up with a 3-minute talk competition in late November. The scholars competed by conveying in plain language their work and its impact on them, through short elevator-pitch style talks. This popular format fosters skill at effectively explaining research to a broad audience. Judges often include nonscientists at the institute.

HBCU-Connect is a new OSD program targeting local HBCUs to build awareness of NIEHS and environmental health careers among freshmen and sophomores. "We can expand the pipeline by feeding into it sooner," Reid explained. Students will be encouraged to learn more about NIEHS through information sessions, shadow researchers during spring break, and apply to the Summer Internship Program. "That way, they would already know about NSCP and be prepping for it," she continued.

Nearby North Carolina Central University (NCCU) is slated to be the first connection, launching in spring 2021. "We would have launched this fall, with tours by freshmen and sophomore students and faculty, and meetings with current scholars and postbacs," Reid said, referring to postbaccalaureate fellows.

To recognize the new relationship, NIEHS and National Toxicology Program director Dr. Rick Woychik spoke virtually with NCCU students in early November. He described environmental health concepts such as the microbiome, developmental periods at which a body is particularly susceptible to exposures, epigenetics and exposures to mixtures compared with single chemicals. By sharing research findings sponsored by NIEHS, he provided concrete examples of those concepts at work.

Reid has long conducted outreach by attending the Society for Advancement of Chicanos/Hispanics and Native Americans in Science, the Annual Biomedical Research Conference for

Minority Students, Society of Toxicology and other conferences. The first two groups register several thousand participants for their annual meetings, more than 900 of whom are students, according to Reid. She promotes environmental health, internships, fellowships and other opportunities at the institute.

Other OSD initiatives include:

- School partnerships, with visits to classrooms by NIEHS Speakers Bureau volunteers, teacher workshops and multiyear partnerships with specific schools, especially those with underserved populations. Dr. Hwei-Chen Lee coordinates K-12 science education.
- The Diversity Speaker Series hosts talks by scientists and other professionals from underrepresented groups emphasized by the NIH Office of Equity, Diversity and Inclusion—women, sex and gender minorities, people with disabilities, African Americans, Hispanics, Native Americans and Asian and Pacific Islanders.
- Internal efforts include NIEHS intranet pages on equity, diversity and inclusion, as well as a blog on related topics.

The NIH Scientific Workforce Diversity Strategic Plan recognizes that diversity increases creativity and performance, supports innovation, is essential for reducing health disparities and achieves more equitable use of public funds. **R**

VOLUNTEERS

People with Fanconi Anemia Sought

NHLBI researchers need volunteers at least 2 years old with Fanconi anemia to participate in a study investigating a treatment to improve blood counts. Compensation for travel is provided. Study-related tests are provided at no cost and results are shared with you and your doctor. Call the Office of Patient Recruitment, 1-866-444-2214 (TTY 1-866-411-1010). Online <https://go.usa.gov/xQyKp>. Reference study #17-H-0121.

Volunteers Needed for Asthma Study

People of African ancestry have a higher incidence of asthma and allergic diseases compared to other population groups. Researchers at NHGRI are investigating whether there is a genetic cause for this. Understanding the role that genes play may someday lead to better treatments for these conditions. Consider volunteering, if you are at least 18 years of age and self-identify as Black, African, African American or African Caribbean—both healthy volunteers and adults diagnosed with asthma are needed. For more information, contact the Office of Patient Recruitment at (866) 444-2214, (800) 877-8339 TTY/ASII or prpl@cc.nih.gov. Refer to study #19-HG-0092. Online <https://go.usa.gov/x7RXQ>.



OSD helps the institute achieve its strategic goal by connecting with elementary students through postgraduate trainees.

IMAGE: NIEHS



NIH director Dr. Francis Collins gives the thumbs up for Harris's remarks about Covid vaccination, NIH's role in developing it and the value of scientific research in general.

PHOTO: CHIA-CHI CHARLIE CHANG

biomedical research, the Vice President said, "My first job was cleaning pipettes in my mother's lab...I grew up around science. [It was] taught to me by someone who was so profoundly passionate about a gift, which is what scientists give to us. Their whole reason for being is to see what can be, unburdened by what has been. Their whole reason for being is to pursue what is possible for the sake of improving human life and conditions. It is such a noble pursuit. And the importance of NIH is that it's an essential function of government—to provide for the public's health."

In brief remarks, Collins pointed out that the Moderna vaccine administered to Harris had been developed initially at NIH's Vaccine Research Center, which is located a couple hundred yards across campus from the auditorium. In addition, he noted, some of the first clinical tests for safety and efficacy had been conducted in the very building where the afternoon's visit took place—the Clinical Center, or "the House of Hope" as some call it.

"We're proud to have you here to say a few words about how NIH has played such a central role in responding to this Covid crisis, which sadly now has taken more than 420,000 [U.S.] lives," Collins said. "We're working every day to come up with ways to further limit that toll."

He noted that approximately 23 million people had been immunized already nationwide, at the rate of about a million per day. "And we want to get that number up even further," he added. "Thank you, President

Vice President

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The late Dr. Shyamala Gopalan Harris was a distinguished breast cancer scientist funded over several years by NIH, Collins reported. She earned her Ph.D. at the University of California, Berkeley, and conducted research for many years at Lawrence Berkeley National Laboratories, among other institutions. Her work focused on the hormones progesterone and estrogen, and their effects in normal development and in cancer.

Gopalan Harris was listed as principal investigator/project lead from 1987 to 2001 on grants awarded by NCI, NICHD and the National Center for Research Resources. She also visited NIH frequently as a peer reviewer in the biochemical endocrinology study section.

"Growing up, all we'd know is that 'Mommy's going to Bethesda,'" recalled Harris, smiling. "My mother had two goals in her life—to raise her two daughters and to end breast cancer."

Describing how highly she regards



At left, Harris greets viral immunologist and research fellow Dr. Kizzmekia Corbett of NIAID's Vaccine Research Center. At right, VRC deputy director Dr. Barney Graham (l) and Second Gentleman Doug Emhoff bump elbows.

OFFICIAL WHITE HOUSE PHOTOS: LAWRENCE JACKSON



Above, NIAID director Dr. Anthony Fauci, who also serves as President Joe Biden’s chief medical advisor, chats with Harris.

OFFICIAL WHITE HOUSE PHOTO: LAWRENCE JACKSON

In brief remarks, Harris emphasized the White House’s goal for 100 million Covid vaccinations in 100 days.

PHOTO: CHIA-CHI CHARLIE CHANG



Biden, for encouraging that stretch goal. [The vaccine’s] not all that NIH has been engaged in. We’re also deeply involved in developing and testing therapeutics. We’ve made considerable progress with monoclonal antibodies. [NIH also is studying and

Acknowledging the dedication and commitment that scientific research demands, Harris ended by saluting NIH’s mission and all those who carry it out.

“The work that goes on here has one goal—to improve public health,” she said.



“The importance of the work that happens at NIH is that it’s not about the profit; it’s about the people. I say to everyone who works here: I know you. I know who you are. I know what you do.”

-VICE PRESIDENT KAMALA HARRIS



devising novel coronavirus] diagnostics and new technologies. [Those would] make it possible to have at-home testing for this particular virus. That would be a great opportunity, especially as we’re trying to get kids back in school, which I know is a big priority [of the Biden administration].”

“The importance of the work that happens at NIH is that it’s not about the profit; it’s about the people. I say to everyone who works here: I know you. I know who you are. I know what you do. I know you work around the clock with those experiments that have to be checked on every few hours and they don’t care what time is on the clock. I know the work you do and the collaboration that is required. I know the work you do reviewing grants, because of course some of the most significant scientific research has been publicly funded.

“I have the luxury of being here at this moment on just the [sixth] day of our administration—coming full circle, because NIH was such a huge part of my youth—to say thank you for all you’re doing.”

A short video about getting the vaccination was released later that day on social media, <https://twitter.com/VP/status/1355180765986889731?s=20>. **R**



Harris watches as Emhoff receives his second shot of the Moderna Covid-19 vaccine, administered by Elizabeth Galloway, an OMS RN.

OFFICIAL WHITE HOUSE PHOTO: LAWRENCE JACKSON

BLACK HISTORY MONTH

NCCIH’s White Named Change Agent

Dr. Della White, a program director in the NCCIH Division of Extramural Research, has been selected as a change agent as part of the “NIH Champions of the Black Community” campaign sponsored by the



Dr. Della White

PHOTO: LISA HELFERT

Office of Equity, Diversity and Inclusion (EDI) in honor of Black History Month 2021.

“We honor those who encourage others by their example and demonstrate unconditional commitment, compassion and understanding

towards the Black community and who bring more of themselves into the workplace to make it more inclusive,” EDI writes. A key principle of the campaign is “allyship—a lifelong process of building meaningful relationships based on trust and accountability with marginalized individuals and/or groups of people.”

White is interested in the role of social and structural determinants of health in the use of complementary and integrative health approaches to improve health outcomes, particularly among health disparity and other vulnerable populations. Her NCCIH research portfolio includes studies of such approaches for health promotion and restoration, resilience and disease prevention across the lifespan and in diverse populations.

She is a member of the NCCIH diversity health and disparity working group, She also represents NCCIH on several NIH-wide committees on prevention research, women’s health research and program leadership. She holds a Ph.D. in health education and health promotion from the University of Alabama at Birmingham and completed postdoctoral training in public health genomics within NHGRI’s Division of Intramural Research.

You can read interviews with White and other 2021 change agents and game changers at <https://www.edi.nih.gov/people/sep/blacks/campaigns/black-history-month-2021/nih-champions-of-black-community#6>.

Cooper

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remained haunted by, the dire poverty of many of her fellow citizens.

“Those children I saw around me in Liberia were the faces of health disparities,” said Cooper, a professor at Johns Hopkins University schools of medicine, nursing and public health. “I was acutely aware of this, even as a young child, and I always wondered what it would be like if we all had similar opportunities to have a good life.”

Guided by these early memories and inspired by her parents—a surgeon and a university librarian, both involved in civic organizations—Cooper would become a medical doctor and health services researcher, committed to achieving social justice and health equity.

When Cooper arrived in Baltimore 30 years ago for her medical residency, the extreme poverty and neighborhood crime compounded by the drug epidemic were jarring. Many of her patients lacked the opportunity to be healthy. Even today, many African-American patients coming to Johns Hopkins Hospital are poor, with an average life expectancy 20 years lower than the doctors and nurses, most of whom are white and live in affluent neighborhoods.

“Health is shaped a lot by where people live and their life experiences, before they even get into the health care center,” said Cooper, who spoke virtually at the recent

WALS Dyer lecture. “I saw communication problems between these patients and the doctors and nurses who were seeing them that often compromised diagnosis and treatment.”

Widespread health disparities affect quality of life and mortality rates for the marginalized, and incur costs that affect all of society. In Baltimore this year, the Covid-19 pandemic has magnified these disparities, noted Cooper, who seeks to change the way health care is delivered to underserved populations.

At the heart of health care outcomes is the relationship among doctors, patients and



Cooper delivers the Dyer lecture virtually from her home.

and had less trust in their doctors than white patients. Audio recordings of medical visits revealed that doctors dominated the conversation and sounded less empathetic with their Black patients.



“Health is shaped a lot by where people live and their life experiences, before they even get into the health care center.”

DR. LISA COOPER



administrators, from getting a diagnosis to exchanging information to deciding who gets what treatment, said Cooper. Studies she spearheaded found that African-American and Hispanic patients of white doctors participated less in their health decisions

“We all, as health professionals, don’t go into medicine thinking we’re going to treat people differently,” Cooper said, “so I think doctors were a little taken aback by [the findings].”

Diving deeper, another study of primary care doctors and their patients in the Baltimore-Washington area using surveys, patient ratings and audiotaped visits found that 70 percent of doctors exhibited implicit bias, favoring Whites over Blacks, and stereotypes that Whites are more medically adherent than Blacks. As the research mounted, Cooper and colleagues contemplated how to reduce these disparities.

She and her team at Hopkins embarked on a three-pronged approach toward sustainable social change on a national and global scale: community engagement—involving health partners, civic organizations and policymakers—research and training. Johns Hopkins University recently launched two courses on health equity research, with thousands already enrolled worldwide, and is developing another on addressing structural racism in health care.

On the research front, Cooper discussed

Where It All Began

Born and raised in Liberia, Cooper was inspired by her parents—her dad, a surgeon, and her mom, a university librarian—to help others and serve the community.

several clinical trials simultaneously examining chronic conditions and delivery of care, results that could help inform changes in health policy. The NHLBI-funded RICH LIFE (Reducing Inequities in Care of Hypertension: Lifestyle Improvement for Everyone) Project has enrolled 1,800 patients from 30 primary care clinics across Maryland and Pennsylvania, with a goal of lowering heart disease risk among minority and low-income populations. Another clinical trial in Baltimore, the NIMHD-funded Five Plus Nuts and Beans for Kidneys, is studying whether low-income African Americans with uncontrolled hypertension could benefit from counseling and incentives to change dietary behaviors.

Efforts are also underway to go global and apply lessons from one setting to another. One such project that JHU launched with Kwame Nkrumah University in Ghana, called ADHINCRA (Addressing Hypertension Care in Africa), is studying ways to improve health self-management among rural and low-income patients. With technology widely available in the country, researchers are exploring whether culturally appropriate text

messaging, a Ghanaian-language app and other mobile health technology—along with visits from community-based nurses—would improve health behaviors and outcomes.

Such initiatives have the potential to transform the way health care gets delivered to underserved populations. Ensuring access

“[and] that they [inequities] are a lot about these other factors that we as a society have made decisions about how we allocate our resources, and that impact people’s ability to be healthy.”

Cooper continues to steer the course with purpose, not stopping until everyone



NIH director Dr. Francis Collins introduces the Dyer lecture, the oldest, continuous speaker series at NIH, named after former NIH director Dr. Rolla Eugene Dyer. NIA deputy director Dr. Marie Bernard moderates the Q&A.

to care for all, reducing disparities in quality of care, and addressing patients’ social needs are some of the ways to advance health equity, Cooper said.

“It’s really in getting our society to appreciate that inequities in health are about more than individual choices,” she concluded,

has an opportunity to attain his or her health potential.

“Together, we are stronger, healthier and better equipped,” she said, “if we can stay on course on this journey with our co-captains and companions, persevering through the turbulence.”

Covid-19 Pandemic Magnifies Health Disparities

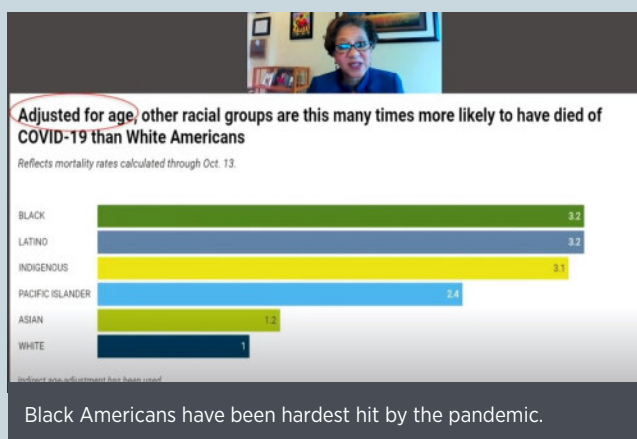
Dr. Lisa Cooper’s lifelong journey to reduce health and social disparities hit unexpected turbulence when Covid-19 struck.

Disparity populations have been hardest hit by the pandemic. Black Americans and other historically disadvantaged populations are experiencing disproportionately high infection, hospitalization and death rates.

In Maryland, for example, Black Americans comprise 30 percent of the population, yet represent 36 percent of Covid cases and 40 percent of Covid deaths, according to data from Johns Hopkins Medicine. African Americans, Latinos and indigenous people are 3 times more likely to have died of Covid-19 than White Americans.

For vulnerable populations, Covid created the perfect storm, said Cooper. Ethnic minorities are more likely to work in essential jobs, making them even more susceptible to illness, yet they often lack paid sick leave, health insurance or access to health care services. Many lower-income people also lack access to such necessities as food, water and adequate housing. Exacerbating disparities, many African Americans—skeptical from past discriminatory experiences—remain reluctant to seek care.

“We don’t have systematic, comprehensive investments in addressing social determinants of health,” said Cooper. “We want to flatten that curve long term.” To do so, “We need to focus on protecting the most vulnerable, not only because it’s the right thing to do ethically...but it also decreases the spread of infection.”



Black Americans have been hardest hit by the pandemic.

Cooper’s team has launched ancillary studies to examine inequities during Covid and developed interventions and recommendations to help the most vulnerable.

Tracking data by race, ethnicity and geography, she said, helps local and national leaders assess infection risk and how best to allocate resources. Vulnerable groups need social services. Essential and low-wage workers need protective personal equipment, Covid testing, safe working conditions and sick leave. The disadvantaged need enhanced access to health care and testing.

“Resistance to the spread of poor health in our society will only occur,” said Cooper,

“when we have a sufficiently high proportion of people across all groups who are protected from, and immune to, negative social factors.”

Cooper underscored the need to engage more effectively with communities of color by listening to their concerns and working with community partners to dispel myths, promote conversation and build trust.—**Dana Talesnik**

New Class of Biologic Found Effective in Treating COPD

NIH researchers found that inhaling unfragmented hyaluronan improves lung function in patients suffering from severe exacerbation of chronic obstructive pulmonary disease (COPD).

Hyaluronan, a sugar secreted by living tissue that acts as a scaffold for cells, is also used in cosmetics as a skin moisturizer and as a nasal spray to moisturize lung airways. Utilized as a treatment, hyaluronan shortened the amount of time COPD patients in intensive care needed breathing support and reduced their number of days in the hospital.

The study, published online in *Respiratory Research*, is a good example of how examining the effects of environmental pollution on the lungs can lead to viable treatments.

Several years ago, co-senior author Dr. Stavros Garantziotis, medical director of the clinical research unit at NIEHS, showed that exposure to pollution causes hyaluronan in the lungs to break down into smaller fragments, which irritate lung tissue and activate the immune system, leading to constriction and inflammation of the airways. He determined that inhaling healthy, unfragmented hyaluronan reduces inflammation by outcompeting the smaller hyaluronan fragments.

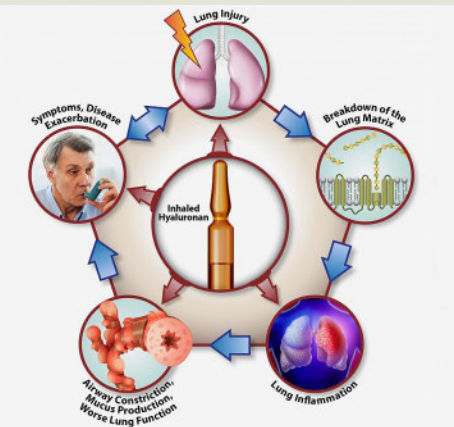


IMAGE: STAVROS GARANTZIOTIS

“Inhaled hyaluronan qualifies as a stimulating aid for patients with exacerbated COPD, as it is safe and easy to administer,” said co-senior author Dr. Raffaele Incalzi of Campus Bio-Medico University and Teaching Hospital, Rome. “Furthermore, it acts locally, only in the bronchial tree, and thus cannot interfere with any systemic drug.”

Current treatments for lung disease include inhaled steroids, antibiotics and bronchodilators. Using a molecule already found in the body is a new concept. Garantziotis aims to study this treatment in more patients to understand the optimal conditions and dosing that would produce the most benefit.



A teen suffering from depression waits to be evaluated at a hospital.

PHOTO: JSMITH/ISTOCK/GETTY

Computerized Screener Helps Detect Youth Suicide Risk

Researchers have developed a computerized adaptive screener to identify youth at risk for attempting suicide. In a new study, the computerized adaptive screen for suicidal youth (CASSY) correctly identified 82.4 percent of youth who went on to attempt suicide in the 3 months after screening. The findings from this NIMH-funded study appear in *JAMA Psychiatry*.

Suicide rates for adolescents have risen over the past two decades. Some 40 percent of adolescents who die by suicide have been treated for a mental health concern, often at an emergency department (ED).

Given the time and budgetary constraints of many EDs, a screener that can quickly and accurately identify suicide risk could be especially useful in these settings.

The CASSY goes beyond a typical questionnaire by using a person’s initial responses to help vary and personalize the later questions, adapting to each person who takes it. This allows hospitals to alter the sensitivity and specificity of the screen and then target mental health follow-up and resources where most needed.

The study, led by Dr. Cheryl King, a psychiatry professor at the University of Michigan, was a collaboration with 13 EDs within the U.S. Pediatric Emergency Care Applied Research Network and one Indian Health Service ED.

Youth admitted to an emergency department at the study sites answered about 11 questions about suicide ideation; history of suicide attempts; self-injury; depression; hopelessness; alcohol and drug misuse; abuse; family, school and social connectedness. Researchers then followed up with the families 3 months later.

“No young person should die by suicide, which is why we have made bending the curve in suicide rates a priority area of research for our institute,” said NIMH director Dr. Joshua Gordon. “The CASSY screener represents an important advance in identifying those adolescents who are at risk for suicide, so they can be connected with the critical support services they need.”

Intranasal Flu Vaccine Spurs Strong Immune Response

An experimental single-dose, intranasal influenza vaccine was safe and produced a durable immune response when tested in a phase 1 study, published in the *Journal of Clinical Investigation*.

The investigational vaccine, called Ad4-H5-VTN, is a recombinant, replicating adenovirus vaccine designed to spur antibodies to hemagglutinin, a protein found on the surface of influenza viruses that attaches to human cells.

Developed by Emergent Biosolutions Inc. in Gaithersburg, Md., the investigational vaccine was administered intranasally (28 study participants), as an oral capsule



An intranasal flu vaccine shows promise in early trial.

PHOTO: NIAID

(10 participants) and via a tonsillar swab (25 participants) to healthy men and nonpregnant women ages 8 to 49.

Participants who received the vaccine intranasally or via tonsillar swab showed significantly higher H5-specific neutralizing antibody levels compared to the group receiving the vaccine capsule orally. The participants who received the intranasal vaccine shed viral DNA for 2 to 4 weeks, but virus could be cultured for a median of only 1 day.

Volunteers who received the intranasal vaccine had high levels of serum neutralizing antibodies at 26 weeks after vaccination, and this level was unchanged at 3 to 5 years after a single intranasal dose of the vaccine. The duration of viral shedding correlated with a high magnitude of neutralizing antibody response at week 26. The intranasal vaccine induced a mucosal antibody response in the nose, mouth and rectum.

The study authors speculate that replication-competent vector vaccines may have advantages over other types of vaccines because they can express viral proteins at higher levels and for longer durations.

Additionally, this type of vaccine induces a mucosal immune response that is critical for limiting transmission of viruses that infect mucosal tissues.

The study authors said this vaccine platform could be highly adaptable for use against other viruses, including HIV and SARS-CoV-2.



Dr. Dorothy Beckett

Beckett Named NIGMS Division Director

Dr. Dorothy Beckett recently joined NIGMS as new director of its Division of Biophysics, Biomedical Technology, and Computational Biosciences (BBCB). She is a molecular biophysicist whose research has focused on the physical chemistry of protein function and its role in regulatory biology. She is also a leader in the scientific community and a proponent of expanding opportunities for women and underrepresented groups in science.

The division supports development of cutting-edge biophysical and computational methods and tools and technologies to better understand biological systems and provide the foundation for advances in disease diagnosis, treatment and prevention.

“BBCB funds research that joins biology with the computer sciences, engineering, mathematics and physics,” said NIGMS director Dr. Jon Lorsch. “Dr. Beckett’s wealth of knowledge and expertise in managing and expanding biophysics programs, as well her experience in effectively engaging with the scientific community and key stakeholder groups, make her an ideal choice for leading the division’s highly complex programs.”

Before coming to NIGMS, Beckett was a professor in the department of chemistry and biochemistry at the University of Maryland, College Park. Prior to joining UMCP in 1999, she was an associate professor of chemistry and biochemistry at the university’s Baltimore County campus. She has served in a number of leadership positions, including as president of the Biophysical Society from 2014 to 2015.

“As director of the NIGMS BBCB Division, I look forward to advancing the nation’s basic research enterprise, which provides the knowledge and tools for developing novel solutions to our health challenges,” Beckett said.

Beckett earned a Ph.D. in biochemistry from the University of Illinois at Urbana-Champaign and performed postdoctoral research at the Massachusetts Institute of Technology and Johns Hopkins University. Her honors include a DuPont Young Professorship Award, a distinguished professor award from Hamilton College and an NIH postdoctoral fellowship. —Susan Athey

NIMHD’s Hunter Retires After Long-Time Service to NIH

BY BETHANY HOFFMAN

After more than 31 years of service to NIH, Dr. Joyce A. Hunter, senior advisor to the director of the National Institute on Minority Health and Health Disparities, retired at the end of December. A cardiovascular physiologist by training, Hunter is a recognized expert on NIH extramural policies and has had an extensive career in program and scientific review administration.

Many of her colleagues know her mainly from her roles at NIMHD, where she was recruited to serve in 2007 as deputy director, back when the institute was still a center. However, Hunter had accumulated numerous additional accomplishments previously during nearly two decades of service at the National Heart, Lung, and Blood Institute and the National Institute of Diabetes and Digestive and Kidney Diseases.

Prior to joining NIMHD, she served as deputy director in the Division of Extramural Activities at NIDDK. She coordinated scientific program policies that governed clinical research.

Hunter began her NIH career at NHLBI, steadily progressing from program officer to chief of the vascular research training and career development group. She then moved

laterally into review, becoming a scientific review administrator and later, chief of the contracts, clinical studies and training scientific review section.

Throughout her career, Hunter has served as a member or chair of many key extramural program management committees and work groups, including the NIH Response to the Office for Human Research Protections for Tissue Specimen Coding, the development of the NIH-Veterans Affairs Memorandum of Understanding on Tissue Banking and the human subjects protection liaison committee. She has given presentations and conducted workshops on behalf of the NIH Office of the Director at regional, national and international meetings.

Her achievements have earned her several awards including the NIH Director’s Award (5), the NIH Award of Merit (4), the NIDDK Director’s Award, the NHLBI Award of Merit and recently, the NIAID Director’s Award. In addition, Hunter has received international recognition from the Bolivian-

American Medical Society, Inc., for her work contributing to the development of minority scientists.

Hunter received a bachelor’s degree in biology from Dillard University in New Orleans, where she participated in the National Institute of General Medical Sciences-sponsored Minority Biomedical Support Program. She received her doctorate in physiology from Howard University, Washington, D.C. As a pre-doctoral trainee on a National Research Service



Dr. Joyce A. Hunter

Award institutional training grant, she received specialty training in cardiovascular (cardiac mechanics) physiology. She was also an American Physiological Society Porter fellow. Her research focused on the relationship between myocardial wall stress and structure/function changes associated with left ventricular hypertrophy resulting from induced renovascular hypertension.

In addition to her many accomplishments, to her closest colleagues, Hunter will also be remembered for her avid collection of all things *Star Trek*. **R**



Daryl Flood (l, in red jacket) is a background actor in *Wonder Woman 1984*. In the image at right, Flood appears in one of multiple scenes throughout the movie. He can also be spotted in scenes near the National Mall, at the Watergate Hotel and on Pennsylvania Avenue.



And...Action! NIH'er Appears in New Movie

For years, Daryl Flood has turned his acting aspirations into “extra” work, popping up in TV shows, documentaries and movies. You can now spot this NIH'er as a background actor in *Wonder Woman 1984*.

A record and information management specialist for the Executive Secretariat in OD, Flood keeps busy outside of work raising his six children while pursuing his acting dreams. Flood didn't have to travel far for his latest project, which was filmed in and around D.C. prior to the Covid pandemic.

“We were treated like VIPs and [enjoyed] the best food, free, all day. But it wasn't all glamorous,” Flood said. Filmed over the summer, the movie is set in the fall. Flood said he felt unbearably warm for hours at a time in his fall wardrobe and wig on steamy summer days.



Flood spent 16 long days on set. “Always with filming, you have to prepare to do at least 14 hours

[each day]: 2 for wardrobe and makeup and 12 for filming,” he said. “You have to really want to do this type of work and be physically and mentally prepared for it.”

He especially enjoyed working with movie director Patty Jenkins and *Wonder Woman* star Gal Gadot, and seeing the inner workings of film production, as the crew descended on various D.C. neighborhoods, blocking off downtown streets and thoroughfares.

On the second day of filming, Flood became eligible for Screen Actors Guild membership. He intends to join the union soon to take his acting career to the next level.—**Dana Talesnik**

Seasonal Challenge—Staying Fit

The *Record* asked readers how they were moving toward their fitness goals as weather challenges emerge. Here are a couple responses. Got a suggestion? Send it with a photo to nihrecord@nih.gov.



Winter's Winter Workout. My wife and I are competitive paddlers all summer, and put in over 500 miles this summer in our marathon canoe. But we break from our routine in the winter with other training. We focus on core and strength building, spending an average of 90 minutes per day exercising. I am also continuing into my 41st year of practicing Tae Kwon Do.—**Dr. David B. Winter**, a former scientific review officer at the Center for Scientific Review who recently left for BARDA



Layering Key to Cycling in Cold. My 20-mile round-trip bicycle commute to NIH is the bulk of my daily exercise. There is great cycling gear available to stay warm in winter, including balaklavas, neck gaiters, ski masks, bib tights, rubber shoes and windproof jackets. In the extreme cold, T=20s-30s, I just double up on the head, body, legs and gloves. Below 20, I need a layer over the shoes. But basically, it's the same challenges as for skiing and the same basic solution: layers. I hate the cold, and am the last person to ride in winter if layers didn't work. They do!—**Dr. Philip M. Murphy**, chief, molecular signaling section, Laboratory of Molecular Immunology and chief, Laboratory of Molecular Immunology, NIAID